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ECONOMICS, STATISTICS, AND COOPERATIVES SERVICE
U.S. DEPARTMENT OF AGRICULTURE



COMPETING FOR EXPORT MARKETS

The United States has long been the world's chief producer and exporter of farm products. While staying on top will be fairly easy for the time being, the future holds tougher and more widespread competition for foreign markets.

U.S. exporters now face the challenge of maintaining traditional markets, boosting sales to growing markets, and achieving more stable export growth.

The outlook is mixed for sales to traditional markets. Foreign trade will remain vital to the European Community (EC) and Japan—our two biggest customers—since neither has much potential for expanding domestic farm output.

Access to EC markets, however, continues to be hampered by the Community's Common Agricultural Policy, which imposes duties and levies on grain imports in order to support domestic farm prices.

Japanese policies generally have been more favorable and will probably stay that way. However, by embagoing soybean exports in 1973, the United States lost some of its credibility as a reliable supplier, and the Japanese have since found additional sources for oilseeds and feed grains.

India, another traditional market, has built up sizable grain stocks of its own following three good harvests. Last year, for the first time, India exported more grain than it imported.

The surest potential for export growth now rests with the two fastest growing markets—the Mideast and Eastern Europe.

The oil-rich nations of the Mideast have only limited capacity for agricultural production. As long as incomes in the oil areas continue to rise, so will the demand for meat and U.S. animal and feed products.

Prodded by mounting consumer pressure for improved diets—largely

through increased meat production—East European nations have had to turn westward when the USSR couldn't fill their livestock and feed demands. Look for sales to Eastern Europe to continue climbing, at least for the short run.

The United States' two sporadic markets—the Soviet Union and the People's Republic of China—loom as major question marks in our farm export future.

The Soviet Union has been the most erratic market, although a 5-year grain trade agreement with the Russians has removed some of the volatility. Under the agreement, the Russians promise to buy at least 6 million tons of grain each year, and will give advance notice of purchases to exceed 8 million tons. There's a stopgap measure as well: If the U.S. crop fails, we need not honor the minimum sales commitment.

This season, the Soviets harvested a whopping 235-million-ton grain crop. But while the Russians will be buying less this coming year, the Chinese have come back into the market. The People's Republic of China (PRC) bought about 4 million tons of wheat and corn in 1978—their first U.S. grain purchase since 1974—and may purchase 5-6 million tons in 1979.

This market could dry up again, though, with some good Chinese crops. And since we've no trade agreement with the Chinese, sales could continue to seesaw over the next several years. However, based on his visit to the PRC in November, Secretary Bergland is optimistic that we may be able to achieve an agreement in the not too distant future.

That's where we stand on the market side. What about the competition?

Chief rivals for grain markets are Canada, Australia, Argentina, and

South Africa. Unlike the United States, all four countries have some form of national marketing board to help their products compete in world markets.

The marketing boards provide price guarantees, generally set a limit on prices to farmers, and sometimes undercut competitors by subsidizing their own exports when supplies are large.

The competition doesn't stop with tradition rivals, however. A host of new producers and products—Brazilian soybeans, Malaysian palm oil, Thai corn, and Pakistani cotton, for example—have joined them.

Brazil provides the prime example of an awakening agricultural giant. The country has shifted from a two-cash crop exporter—coffee and sugar—to a multicrop food supplier.

Brazilian soybean output shot from about 1 million tons in 1970 to 12 million in 1977. Last year, Brazil became the world's third largest

soybean producer and its second biggest exporter, chipping away at the U.S. market in the EC. Brazil now exports corn and cotton and is nearing self-sufficiency in wheat.

U.S. exporters also face increasingly tough competition in oilseed markets. Indonesia and Malaysia now export enough palm oil to compete with U.S. soybean oil. And Argentina is selling increasing amounts of sunflowerseed oil.

Two key questions arise on the longer term prospects for export competition: How likely are our competitors to achieve something close to U.S. grain yields? What potential do other exporters have for expanding their cropland?

The more developed of our competitors—Canada, Australia, and South Africa—already have the technology and inputs to maximize yields. But the difference between them and us is the climate: Canada is colder, Australia and South Africa more arid.



None of the three countries has vast tracts of idle, arable land to bring into production. Therefore, barring a great breakthrough on yields, it's unlikely that any of them will substantially boost grain output over the next few years.

The situation is far different,

though, with our three less developed competitors—Argentina, Brazil, and Thailand.

With reasonably decent weather, and wider use of hybrids and inputs such as fertilizer, Argentina could approach U.S. yield levels in good years. The key here lies in govern-

WHEAT AND COARSE GRAIN SITUATION IN MAJOR EXPORTING COUNTRIES

| | Harvested area <i>Million hectares</i> | Yield <i>Metric tons per hectare</i> | Production | Domestic use | Exports | Ending stocks |
|----------------------------|---|---|------------|--------------|---------|---------------|
| <i>Million metric tons</i> | | | | | | |
| Canada | | | | | | |
| 1975/76 | 18.1 | 2.1 | 37.1 | 21.5 | 17.2 | 12.7 |
| 1976/77 | 19.6 | 2.3 | 44.7 | 21.9 | 17.9 | 18.4 |
| 1977/78 ¹ | 18.7 | 2.3 | 42.2 | 21.2 | 20.3 | 19.7 |
| Australia | | | | | | |
| 1975/76 | 12.5 | 1.4 | 17.6 | 4.1 | 12.3 | 3.4 |
| 1976/77 | 12.9 | 1.3 | 16.7 | 5.0 | 12.2 | 2.8 |
| 1977/78 ¹ | 14.3 | 0.9 | 13.4 | 5.0 | 10.0 | 1.3 |
| South Africa | | | | | | |
| 1975/76 | 7.4 | 1.3 | 9.5 | 8.6 | 1.6 | 1.6 |
| 1976/77 | 7.4 | 1.7 | 12.5 | 8.7 | 2.8 | 2.5 |
| 1977/78 ¹ | 7.2 | 1.7 | 12.3 | 8.9 | 3.8 | 2.1 |
| Argentina | | | | | | |
| 1975/76 | 11.2 | 1.9 | 21.0 | 11.9 | 10.2 | 1.0 |
| 1976/77 | 12.8 | 2.2 | 27.9 | 11.3 | 15.8 | 1.7 |
| 1977/78 ¹ | 10.4 | 2.2 | 23.1 | 11.1 | 12.9 | 0.9 |
| Brazil | | | | | | |
| 1975/76 | 14.6 | 1.4 | 20.0 | 22.2 | 1.5 | 0.9 |
| 1976/77 | 15.8 | 1.4 | 22.4 | 23.3 | 1.4 | 1.4 |
| 1977/78 ¹ | 13.8 | 1.2 | 16.8 | 22.5 | 0 | 1.2 |
| Thailand | | | | | | |
| 1975/76 | 1.5 | 2.2 | 3.4 | 0.7 | 2.6 | 0.2 |
| 1976/77 | 1.6 | 1.8 | 3.0 | 0.9 | 2.3 | 0.2 |
| 1977/78 ¹ | 1.7 | 1.4 | 2.2 | 1.1 | 1.3 | 0.2 |
| Total, non-U.S. | | | | | | |
| 1975/76 | 65.3 | 1.7 | 108.6 | 90.5 | 45.4 | 19.8 |
| 1976/77 | 70.1 | 1.8 | 127.2 | 71.1 | 52.4 | 27.0 |
| 1977/78 ¹ | 66.1 | 1.6 | 110.0 | 69.8 | 48.3 | 25.4 |
| United States | | | | | | |
| 1975/76 | 70.7 | 3.4 | 242.8 | 153.8 | 81.4 | 35.4 |
| 1976/77 | 72.0 | 3.5 | 252.2 | 151.9 | 75.8 | 60.3 |
| 1977/78 ¹ | 70.4 | 3.7 | 257.4 | 160.4 | 85.1 | 72.5 |

¹Preliminary.

ment commitment to lifting farm production and exports.

Besides strong potential for bigger yields, Brazil has vast untapped land resources. The government appears committed to developing new farm acreage, making Brazil the biggest threat to U.S. grain and soybean export markets over the long run.

With virtually no land left for expansion, Thailand must rely almost solely on improved yields to raise production. With some help from Japan, the country has become a major corn exporter.

One area to watch is the Sudan. There's good potential for commercial farm production in the Nile Valley, and Arab countries are now investing heavily there with the ultimate hope of turning the Sudan into the breadbasket of the Mideast.

While world wheat and coarse grain trade has doubled since the early 1960's, U.S. grain exports grew by 2½ times. If trends over the past 15-20 years continue, U.S. wheat and coarse grain exports could rise from 1977/78's 83 million tons to more than 90 million in the next 5 years.

Several factors will weigh heavily in the United States' favor in maintaining this export growth: These include domestic and international policies, trade and commodity agreements, and U.S. market development programs.

Domestic policies must be carefully balanced to keep U.S. farmers in business but keep their products competitive in the world market. Programs that go too far to bolster farm income can make U.S. farm goods less competitive. While local farm prices would be higher, the longer run effect of reduced export demand would be lower sales volume and ultimately little change in farm income.

The key to current policy is the farmer-owned grain reserve that offers producers incentive pay-

ments to pull excessive supplies off the market. The reserve also enhances U.S. reliability as an export supplier.

The United States is also working toward establishing an international grain reserve that would stabilize market fluctuations and guarantee supplies in times of extreme shortfalls. However, participating nations have yet to come to a full agreement on the reserve.

While talks at the multination level aimed at reducing barriers to world farm trade have tended to bog down, the United States has made some inroads on a one-to-one basis with other countries. We now have long-term agreements with the USSR and Japan that set minimum and maximum yearly export levels. Less formal arrangements have been made with Poland, Israel, Taiwan, and Norway.

Market development programs remain a key element in boosting trade. The United States traditionally has spent less than its major competitors in this area. Based on a percent of farm export earnings in 1976, Israel spent 15 times more and Australia 11 times more.

In this country, funding for foreign market development comes mainly from the private sector. These funds rose 15 percent this year. Also, the Agricultural Trade Act of 1978 recently passed by Congress will increase the Government's role in export promotion.

In a less direct way, U.S. technical assistance to the poorest foreign countries also promotes market development. By raising local productivity and incomes and reducing dependence on food aid, these programs create demand for commercial imports. Taiwan and South Korea provide prime examples of former food aid recipients that have become major U.S. export markets.

ANOTHER EXPORT VALUE RECORD

Foreign markets are expected to take an unprecedented \$29 billion worth of American farm goods in 1978/79—6 percent more than last year.

With large world stocks of grains for the coming marketing year, U.S. grain shipments could fall a bit shy of 1977/78. But with quantity increases likely for soybeans, tobacco, and several other crops, total export volume of major commodities probably will change little from last year's record.

Of course, any forecast this early

in the season is subject to change. The pace of shipments will depend heavily on wheat, coarse grain, and soybean harvests in the Southern Hemisphere. Favorable growing conditions there could mean rising competition this winter.

World economic developments affecting market demand, the dollar's value, and the price of U.S. farm goods in major foreign markets also will bear heavily on export volume. And any change in agricultural policy could alter the forecast as well.

U.S. EXPORT VALUE

| Commodity | 1975/76 | 1976/77 | 1977/78 | Forecast 1978/79 |
|-----------------------------|---------|---------|---------|---------------------|
| <i>Billion dollars</i> | | | | |
| Grain and feed | 12.161 | 10.124 | 11.711 | 12.2 |
| Oilseeds and products | 4.699 | 6.403 | 7.453 | 8.1 |
| Cotton, including linters | .919 | 1.538 | 1.707 | 1.8 |
| Tobacco | .929 | 1.065 | 1.132 | 1.3 |
| Fruits, nuts and vegetables | 1.455 | 1.649 | 1.880 | 2.0 |
| Sugar and tropical products | .385 | .531 | .572 | .6 |
| Livestock and products | 1.847 | 2.191 | 2.352 | 2.5 |
| Dairy products | .131 | .171 | .159 | .1 |
| Poultry products | .235 | .301 | .332 | .4 |
| Total | 22.760 | 23.974 | 27.298 | 29.0 |

AND VOLUME

| Commodity | 1975/76 | 1976/77 | 1977/78 | Forecast 1978/79 |
|----------------------------|---------|---------|---------|---------------------|
| <i>Million metric tons</i> | | | | |
| Wheat and flour | 30.611 | 24.723 | 32.834 | 31.0 |
| Feed grains | 49.856 | 50.602 | 55.545 | 54.9 |
| Rice | 1.953 | 2.229 | 2.108 | 2.2 |
| Soybeans | 15.050 | 15.156 | 19.686 | 20.1 |
| Vegetable oils | .888 | 1.142 | 1.474 | 1.2 |
| Oilcake and meal | 4.869 | 4.263 | 5.840 | 5.6 |
| Cotton, including linters | .770 | 1.046 | 1.378 | 1.3 |
| Tobacco | .273 | .290 | .272 | .3 |
| Fresh fruit | 1.372 | 1.345 | 1.320 | 1.3 |
| Animal fats | 1.026 | 1.379 | 1.281 | 1.3 |
| Total | 106.668 | 102.175 | 121.738 | 119.2 |



FEWER TRACTORS, MORE HORSES

U.S. farmers began this year of record crops with fewer tractors than at any time since 1955. However, increased horsepower more than offset the smaller number of tractors. Average value per unit for all tractors—new and old—on U.S. farms also has kept pace with bigger and more versatile units, more comfort options—and inflation.

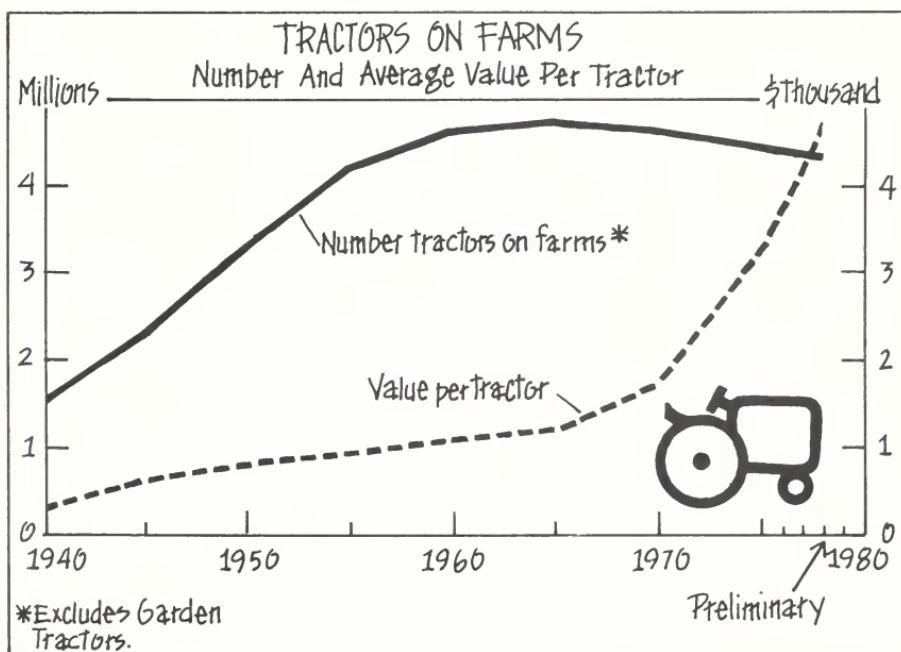
After peaking at more than 4½ million units in 1965, farm tractor numbers have fallen off steadily. The continued decline results partly from the overall downturn in farm numbers, but also reflects slow sales in recent years. Last year, new tractor sales dropped 5 percent.

While making due with fewer tractors overall, farmers continue to

buy increasingly larger units that generally can do more field work in less time.

On January 1, 1978, all farm tractors, including some which may be as old as 30 years, averaged 55 horsepower. This compares with 53 horsepower the year before and 44 at the start of the decade. New tractors sold in 1977 averaged 105 horsepower.

While there are fewer tractors on American farms, rising prices for replacements have nearly doubled the total value of all farm tractors over the past 5 years to more than \$21 billion. At the start of 1978, the average value per tractor of all tractors on U.S. farms stood at \$4,876, compared with \$4,368 a year earlier and \$1,731 back in 1970.



ESTIMATING THE U.S. COTTON CROP

Each August, the Crop Reporting Board launches another season of estimating cotton production.

The program includes monthly forecasts through January for the 14 States raising 99 percent of the crop; and an estimate in August and another in January for the 4 States producing the remainder. Separate estimates are made for upland (short staple) which accounts for virtually all of the cotton crop and American Pima grown in Texas, New Mexico, Arizona, and California.

The 1978 cotton crop was forecast at 11.0 million bales on November 1, substantially below last year's 14.4 million bales. Yields have slipped from 520 pounds per acre in 1977 to about 429 this season. Area for harvest of 12.3 million acres is shy of the year-earlier level of nearly 13.3 million.

The Crop Reporting Board uses three independent sources of data for production forecasts.

Mail surveys conducted by the Board's field offices ask cotton farmers for the condition of the crop and probable yield in their locality. In addition, producers report expected production for the current year and actual output of the preceding season for their individual farms.

The Bureau of the Census provides the Crop Reporting Board with indications of bales ginned to date and potential ginning activity in the months ahead as stated by ginners. These facts are used when setting the official production estimate issued for November, December, and January.

A significant indicator of yield during the growing season is the objective yield survey information—in-the-field counts and measurements.

About 2,400 cotton fields in the 12 major States are selected for monthly visits from August all the



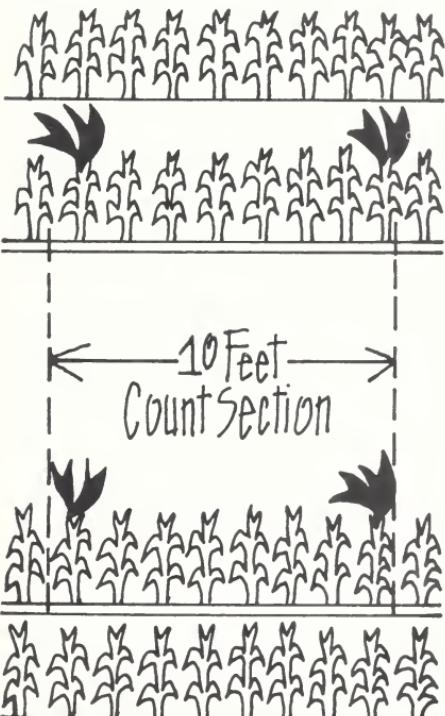
way through harvesttime.

Trained enumerators working out of the field offices lay out sample plots in the cotton fields. Each plot is two rows wide and 10 feet long. Next, the enumerator hand counts the plants, squares, blooms, and bolls in the plot to indicate yield.

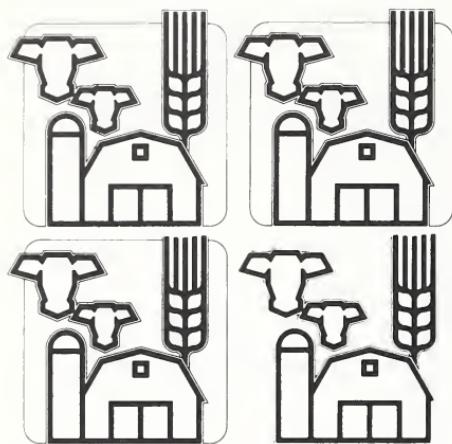
Statisticians forecast yield for each sample by multiplying the historical average lint/seed ratio by the expected number of large bolls and the anticipated weight per boll. An allowance for harvest loss is subtracted from the potential yield.

The yield per acre information is used by statisticians to indicate production prospects for a State or region based on acres for harvest.

An allowance for harvest loss prior to completion of harvest reflects historical averages. Actual harvesting loss is determined by the enumerator who gleans the sample plots immediately following the farmer's harvest.



Above and left: An enumerator must count off a set number of rows and then walk a given number of paces into the sample field. At that spot, a count section two rows wide and 10 feet long is marked off. The number of plants inside the unit and the distance between rows indicate plant population per acre.



BUCKING THE FARM POPULATION TREND

If you live on a cash-grain farm, you're part of a group that has bucked the overall decline in U.S. farm population.

The number of people living on cash-grain farms increased about a third between 1973 and 1975, from 1.8 million to 2.4 million. As a result, their share of the total farm population rose from 20 percent to 27 percent.

Livestock farms still contain the most residents, however, with almost 40 percent of all U.S. farm people in 1975, compared with little more than a fourth on cash-grain farms—the still distant second.

This growth of population on cash-grain farms may be no mystery to those who remember 1973—the year when high prices and huge exports of U.S. grain made such farming enormously attractive.

Besides cash-grain farms, two other types of farms also managed to gain residents. Vegetables, and fruit and nut operations each added about an eighth more people during 1973-75, although they still contain

less than 400,000 people combined.

These trends were among major findings in an ESCS study that compared farm population trends and farm characteristics. Despite the overall trend of declining farm population, the study revealed that wide variations occurred, depending on circumstances.

America's large farms—Class I operations with annual sales of more than \$40,000—gained 900,000 residents during 1970-75 and their proportion of the total farm population doubled from 12 to 24 percent.

Economists recognize that general inflation boosted the dollar values of many farms. Yet, the gain was so substantial that at least part of it reflects a real increase.

Although they were home for somewhat less than a fourth of all farm people, these large farms accounted for 80 percent of total U.S. farm receipts in 1975.

A close look at Class I farming tends to counter the widespread notion that big corporations are taking over American farming.

While 90 percent of all 29,000 corporately owned farms were Class I operations, they were but a small part of the 425,000 Class I farms in 1974. Furthermore, many "corporations" are large family-owned farms that have been incorporated.

Overall, the study finds these implications:

- The decline in farm population is not reflected in total agricultural production, since major producers who account for 80 percent of the output are experiencing population growth.

- Despite heavy losses in numbers, smaller farms with less than \$20,000 in annual sales still account for more than 60 percent of the farm population, but produce only a tenth of the Nation's output.

- Almost 80 percent of the U.S. farm population is found on livestock, cash-grain, and dairy operations.

AGRICENSUS '78

Shorter and simpler 1978 Census of Agriculture questionnaires will be sent to the Nation's farmers and ranchers in January.

The forms are only four or five pages this year, compared with 22 pages in the last survey. For this, Census officials credit recommendations from farmers, ranchers, other users of census information, and the Census Advisory Committee on Agricultural Statistics.

The committee has members representing major farm organizations, several trade groups, food processors, and consumer groups.

The farm census has been conducted every 5 years since 1920, but both the 1978 and 1982 censuses will follow their predecessors by 4 years. This is to put the Census of Agriculture in regular cycle with other economic censuses, and the 5-year interval will resume after 1982.

The Census of Agriculture, conducted by the U.S. Bureau of the Census, has more of an historical orientation than USDA's Crop Reporting Board surveys which provide a continuous source of current information on agriculture to U.S. farmers and ranchers.

The 1978 Census will be in two phases. First, the Bureau will conduct a count of and collect some basic data from all farm operators—information such as how much land is in farming, production and sales of crops, livestock, and poultry, inventories, and operator and farm management characteristics. These

questions will pertain to 1978.

At the same time, 20 percent of the farms will be asked for additional information, such as value of land and buildings, production expenses, types of equipment owned, and the amount of hired farm labor.

The second phase will involve a different sample of farmers. These questionnaires will be mailed in 1980 to cover 1979. Between 10,000 and 50,000 farms will be contacted, with questions on corporate structure, horticulture, farm labor, and farm finance.

The Bureau will use this information to determine averages for all farm operations. As in earlier censuses, the all-farm and 20-percent sample information will be published to cover each of more than 3,000 counties with agricultural operations.

But only totals will be published: Individual questionnaires returned by farmers are off limits to everyone except census employees and are held in strictest confidence.

Census data have many uses which benefit the Nation's producers. Funds for extension services, research, and soil conservation works, for example, are allocated based on the results. Private industry uses the statistics to provide a more effective production and distribution system for the farm community.

The Bureau urges people receiving questionnaires to respond promptly. Otherwise, census officials will need to follow up with letters, phone calls, or personal visits.

In a few cases, farmers or ranchers will not receive forms in the mail—usually because they weren't in agriculture during the 1974 census and don't appear on Bureau mailing lists.

Farmers who don't receive a form in the mail in January may write for one from the Bureau of the Census, Agricultural Division, 1201 East Tenth St., Jeffersonville, Ind. 47132.

Briefings

RECENT REPORTS BY USDA OF ECONOMIC, MARKETING, AND RESEARCH DEVELOPMENTS AFFECTING FARMERS.

EMERGENCY FEED. . . During fiscal 1978, the U.S. Department of Agriculture provided more than \$169 million under the emergency feed program to help U.S. livestock producers buy feed. USDA paid on 93,611 applications, two-thirds of the total filed. Producers were assisted in buying 9.0 billion pounds of feed—the equivalent of 161 million bushels of corn. Texas received the most aid—almost \$40 million or 2.1 billion pounds of feed. California was second, receiving over \$13 million in aid. The Secretary of Agriculture may authorize financial aid to farmers when their livestock are threatened by natural disaster. Participants may be reimbursed up to 50 percent of the cost of feed.

NEW CHART HANDBOOK ISSUED. . . The 1978 *Handbook of Agricultural Charts*—a graphic portrayal of trends in America's agriculture—is now available from USDA's Economics, Statistics, and Cooperatives Service. This year's handbook has more charts than ever before—270—backed with a brief explanatory text and many supporting tables. For easy reference, the charts are grouped into seven main sections: The Farm, Natural Resources, Population and Rural Development, The Consumer, Food and Nutrition, Foreign Production and Trade, and Commodity Trends. For a free copy of the handbook (AH-551), write ESCS Publications, room 0054 South Bldg., U.S. Department of Agriculture, Washington, D.C. 20250.

EXPORTS BIG SHARE OF U.S. CROP ACREAGE. . . Last year, U.S. agricultural exports required the output of 107 million acres, up 5 million from 1976 and equivalent to 31 percent of total U.S. harvested acreage. Food grains, chiefly wheat, accounted for 37 percent of the export acres; oil crops accounted for 30 percent; feed grains, 24 percent; cotton, 5 percent; and all other crops, 4 percent.

NEW EXPORT SALES TOOLS. . . The Agricultural Trade Act of 1978, which the President signed into law on October 21, is designed to improve sales of U.S. farm commodities abroad by increasing and strengthening the tools available for market development. The key provisions provide authority for: 1) a new Commodity Credit Corporation

loan program with repayment terms of 3 to 10 years; 2) 3-year credit sales to the People's Republic of China; and 3) establishing between 6 and 25 agricultural trade offices in the most important commercial regions of the world.

RED MEATS AND EGGS. . . U.S. commercial red meat production in October totaled 3.35 billion pounds, virtually the same as in October 1977, according to USDA's Crop Reporting Board. For January through October, red meat output was 31.7 billion pounds, 3 percent below last year. Comparing October 1978 with October 1977, beef production was about unchanged, veal declined 31 percent, pork was up 2 percent, and lamb and mutton dropped 7 percent. The egg count during October totaled 5.67 billion, 1 percent more than a year ago. The number of layers, at 284 million, was virtually the same as a year earlier. The number of egg-type chicks hatched was just about the same as in October 1977, but the broiler hatch was up 6 percent.

INSPECTION AND WEIGHING FEES REDUCED. . . Federal fees for inspecting grain in barges, ships, and bins were lowered 12½ percent, and hourly rates for weighing services were cut 20 percent on December 3. The reductions were possible because operating reserves were created faster than expected in fiscal 1978, according to USDA's Federal Grain Inspection Service. Fees will remain the same for original inspections in trucks and rail cars, reinspections and appeal inspections in the United States, and inspection and weighing services in Canada.

ELECTRONIC MARKETING. . . USDA's Agricultural Marketing Service (AMS) recently launched three projects to see if computers and high-speed communication devices can help to bring many distant buyers and sellers into the marketing process for certain commodities and, thereby, increase open-market competition in negotiating prices. Georgia is receiving \$244,000 to develop a nationwide computerized system for trading in gradable nest-run eggs. The State will work with Egg Clearinghouse, Inc., in New Hampshire on the project, which will include development of a system for moving eggs from sellers to buyers through the most efficient transportation routes possible. Ohio is receiving \$171,000 to set up computer terminals at Ohio hog collection points for buying and selling slaughter hogs. Terminals will be available to hog slaughterers in Ohio and nearby States. The Federal-State market news service will be integrated into the computer network to supply timely market information. Virginia will receive \$107,000 to establish a statewide telephone auction market for cull cows. Funds are being granted to State departments of agriculture under the Federal-State marketing improvement program of AMS, with each State providing matching funds.

FEWER FARM WORKERS, HIGHER WAGES. . . USDA's Crop Reporting Board noted that total employment on U.S. farms during the survey week of October 8-14, 1978, was estimated at 4.06 million workers, 2 percent fewer than a year earlier. Farm operators working an hour or more and unpaid family members working 15 hours or more totaled 2.76 million and hired workers numbered 1.31 million. Family members worked an average of 40.4 hours during the survey week, compared with 39.0 hours in October 1977. Hired workers averaged 38.8 hours for the week, down from 39.4 hours a year earlier. Farm wage rates for all methods of pay converted to an hourly rate averaged \$3.18, 19 cents above a year ago. Hourly workers receiving only cash wages averaged \$3.34 per hour, compared with \$3.24 a year ago.

LIQUID GREENHOUSE. . . A novel, fluid-roof solar greenhouse will be built and tested at Texas A&M University under a cooperative agreement with USDA's Science and Education Administration. The greenhouse will have a transparent, hollow-core roof through which a mild chemical solution will be circulated. The solution will act as a selective filter to gather heat from the sun but will not prevent the light from reaching the plants inside. The heat captured by the fluid roof will be stored in a large underground tank and used at night to maintain a desirable greenhouse temperature.

RECORDS AROUND THE WORLD. . . France estimates its 1978 wheat production at a record 20.4 million tons, up from last year's 17.4 million. The United Kingdom estimates its 1978 wheat crop at a record 6.6 million tons, up from 5 1/4 million tons in 1977. West Germany pegs its total 1978 grain crop at a record 23.9 million tons, well above last year's 21.6 million and the previous record of 22.7 million in 1974.

TOWARD A HEALTHIER STERILE BOLL WEEVIL. . . With funds provided by USDA's Science and Education Administration, Mississippi State University scientists will study microbes that attack mass-reared and sterilized boll weevils. Sterilized male boll weevils help control native weevil populations because, when they mate with fertile females, the resulting eggs do not hatch. However, microbes could jeopardize this natural pest control technique by killing these mass-produced insects or reducing their mating competitiveness. This research project is part of an overall USDA program to control the weevil and reduce the use of insecticides. Mississippi scientists will study what effect microbes have on boll weevil growth, development, and reproduction; how antibiotics might affect boll weevil functions; and how microbes and antibiotics affect the boll weevil's production of pheromone (sex attractant).

Statistical Barometer

| Item | 1976 | 1977 | 1978—latest available data |
|--|------|------|----------------------------|
| Farm Food Market Basket:¹ | | | |
| Retail cost (1967=100) | 175 | 179 | 205 |
| Farm value (1967=100) | 178 | 178 | 217 |
| Farmer's share of retail cost (percent) | 38 | 38 | 40 |
| Agricultural Trade: | | | |
| Agricultural exports (\$bil.) | 23.0 | 23.7 | 2.3 |
| Agricultural imports (\$bil.) | 11.0 | 13.5 | 1.1 |
| Farm Production and Efficiency: | | | |
| Farm output, total (1967=100) | 117 | 121 | 120 |
| Livestock (1967=100) ² | 105 | 106 | 107 |
| Meat animals (1967=100) | 105 | 105 | 107 |
| Dairy products (1967=100) | 103 | 105 | 104 |
| Poultry and eggs (1967=100) | 110 | 112 | 117 |
| Crops (1967=100) ³ | 121 | 129 | 128 |
| Feed grains (1967=100) | 120 | 124 | 131 |
| Hay and forage (1967=100) | 102 | 108 | 113 |
| Food grains (1967=100) | 141 | 131 | 123 |
| Sugar crops (1967=100) | 128 | 117 | 119 |
| Cotton (1967=100) | 142 | 195 | 148 |
| Tobacco (1967=100) | 108 | 98 | 102 |
| Oil crops (1967=100) | 132 | 171 | 178 |
| Cropland used for crops (1967=100) | 109 | 111 | 108 |
| Crop production per acre (1967=100) | 111 | 116 | 119 |
| Farm Employment and Wage Rates:⁴ | | | |
| Total employment (1967=100) | 89 | 85 | 80 |
| Family labor (1967=100) | 82 | 78 | 75 |
| Hired labor (1967=100) | 110 | 103 | 92 |
| Wage rates (1967=100) | 208 | 225 | 237 |

¹Average annual quantities per household bought by urban consumers in 1972-74, based on Bureau of Labor Statistics figures.

²Gross livestock production includes minor livestock products not included in the separate groups shown. It cannot be added to gross production to compute farm output.

³Gross crop production includes some miscellaneous crops not in the separate groups shown. It cannot be added to gross livestock production to compute farm output.

⁴Seasonally adjusted.



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